In the Claims

Cancel claims 1-68 and 73.

Add claims 74-77 as follows:

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74. A system for executing branches in single entry-single exit (SESE) basic blocks (BBs) contained within a program, said system comprising:

means (620) receptive of said program for determining the branch instruction within each said basic block of said program, said determining means being further capable of scheduling processing of said branch instruction,

means (620, 640) operative on the instructions in each said basic block for processing said instructions, and

means (620, 1548) operative on said branch instruction in said basic block for completing the execution of said scheduled branch instruction during the same time as said processing means is processing the last executed non-branch instruction in said basic block so that the execution of said branch instruction occurs in parallel with the execution of said instructions in said basic block in order to speed up the overall processing of said program by said system.

75. A system for executing branches in single entry-single exit (SESE) basic blocks (BBs) in a plurality of programs utilized by a number of users, said system comprising:

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means (160) receptive of each said programs for determining the branch instruction within each said basic block of each of said programs, said determining means being further capable of scheduling processing of said branch instructions,

means (620, 640) operative on the instructions in each said basic block of each said program for processing said programs, and

means (620, 1548) operative on said branch instructions in each said basic block for completing the execution of said scheduled branch instruction during the same time as said processing means is processing the last executed non-branch instruction in said basic block for a given program so that the execution of said branch instruction occurs in parallel with the execution of said instructions in said basic block whereby overall processing throughput of all said programs by said system is increased.

76. A system for executing scheduled branches in single entry-single exit (SESE) basic blocks (BBs) contained within a program, said system comprising:

means (620) receptive of said program for determining the branch instruction within each said basic block of said program said determining means being further capable of adding instruction firing time information to said scheduled branch instruction,

means (620, 640) operative on the instruction in each said basic block for processing said instructions, and

means (620, 1548) operative on said branch instruction in said basic block for completing the execution of said scheduled branch instruction during the same time as said processing means is processing the last executed non-branch instruction in said basic block so that the execution of said branch instruction occurs in parallel with the execution of said instructions in said basic block in order to speed up the overall processing of said program by said system.

77. A system for executing scheduled branches in single entry-single exit (SESE) basic blocks (BBs) in a plurality of programs utilized by a number of users, said system comprising:

means (160) receptive of each said programs for determining the branch instruction within each said basic block of each of said programs, said determining means being further capable of adding instruction firing time information to said scheduled branch instructions,

means (620, 640) operative on the instructions in each said basic block of each said program for processing said programs, and

means (620, 1548) operative on said branch instructions in each said basic block for completing the execution of said scheduled branch instruction during the same time as said processing means is processing the last executed non-branch instruction in said basic block for a given program so that the execution of said branch instruction occurs in parallel with the

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